

## NM4 SpO<sub>2</sub> Assembly Relocation Kit

### INSTALLATION PROCEDURE

**CAUTION:** Use proper ESD control during all removal and installation procedures.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Disable all circuit breakers by pulling out each button with a knife or sharp object.

**CAUTION:** Do not plug or unplug the remote display cable with power applied.

3. Disconnect the following items from the patient interface panel on the left side of the monitor box:

- Remote Display cable
- BP Cuff & BP Gauge lines
- Pulse Oximeter cable
- Datagrip cable (if applicable)

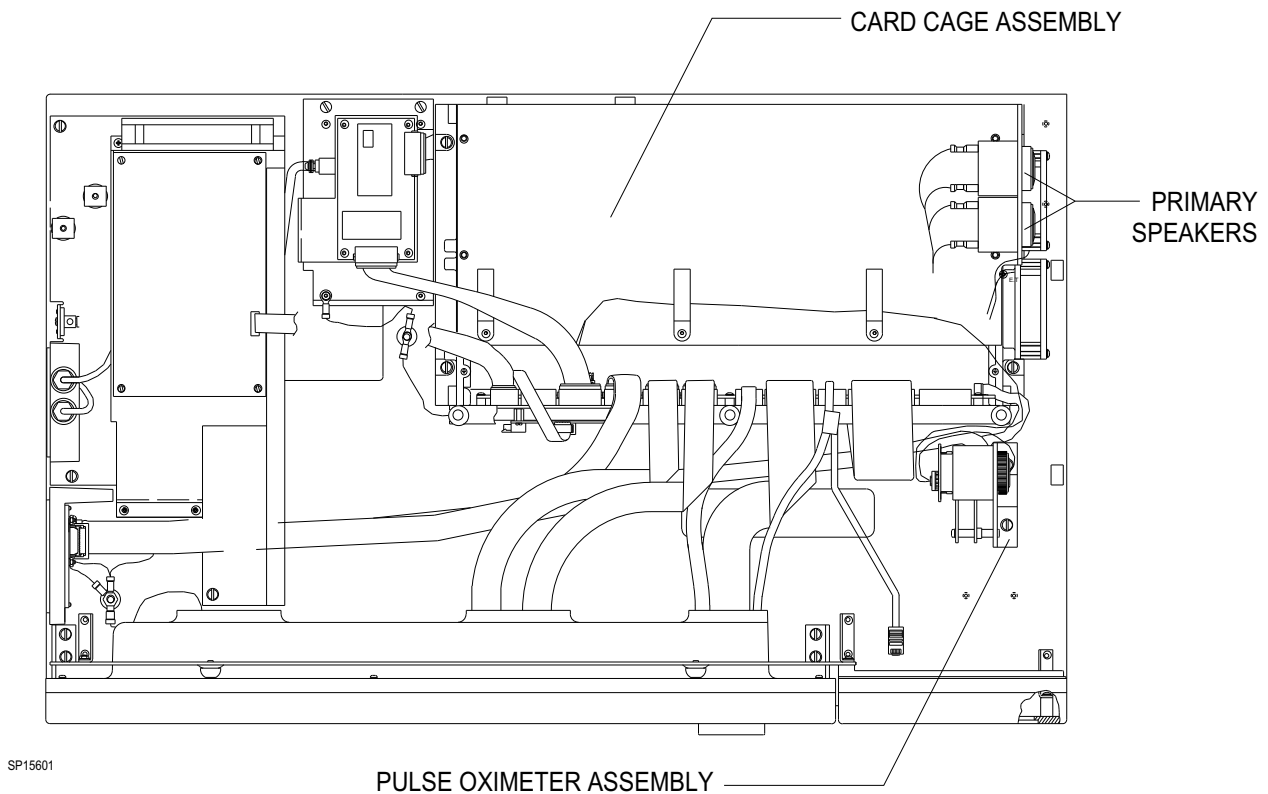
4. Remove the disposable reservoir (and green filter, if so equipped) from its holder.
5. Remove the screws holding the monitor box cover, and carefully lift the cover from the monitor box.
6. Locate the primary speakers mounted to the card cage top cover. See Figure 1.
7. Remove the speakers by unscrewing their mounting rings.

8. Place the third speaker adapter plate (P/N 4113139) on the inner edge of the original 2-speaker mount, and reinstall the speakers as shown in Figure 2. The two primary speakers will hold the adapter plate in position.

**NOTE:** The two holes in the adapter plate that are closest together are for the existing primary speakers. The remaining hole is for the SpO<sub>2</sub> speaker which will be mounted in a later step.

9. Locate the SpO<sub>2</sub> assembly on the right side of the monitor chassis. See Figure 1.
10. Identify the type of SpO<sub>2</sub> assembly installed in the machine by referring to Figure 3. Illustrated Ⓐ thru Ⓓ are earlier thru later versions of the SpO<sub>2</sub> assembly.
11. If the SpO<sub>2</sub> assembly does not have the SpO<sub>2</sub> power adapter PCB, proceed to Step 13.
12. Disconnect any cables from connectors J1, J2, and J3 on the power adapter PCB. Disconnect these cables from the backplane and the speaker amplifier PCB, and discard the cables.
13. Remove the SpO<sub>2</sub> speaker from the SpO<sub>2</sub> chassis and install it in the open position in the adapter plate that was installed in a previous step.

**INSTALLATION PROCEDURE (continued)**



**Figure 1: MONITOR BOX - TOP VIEW**

INSTALLATION PROCEDURE (continued)

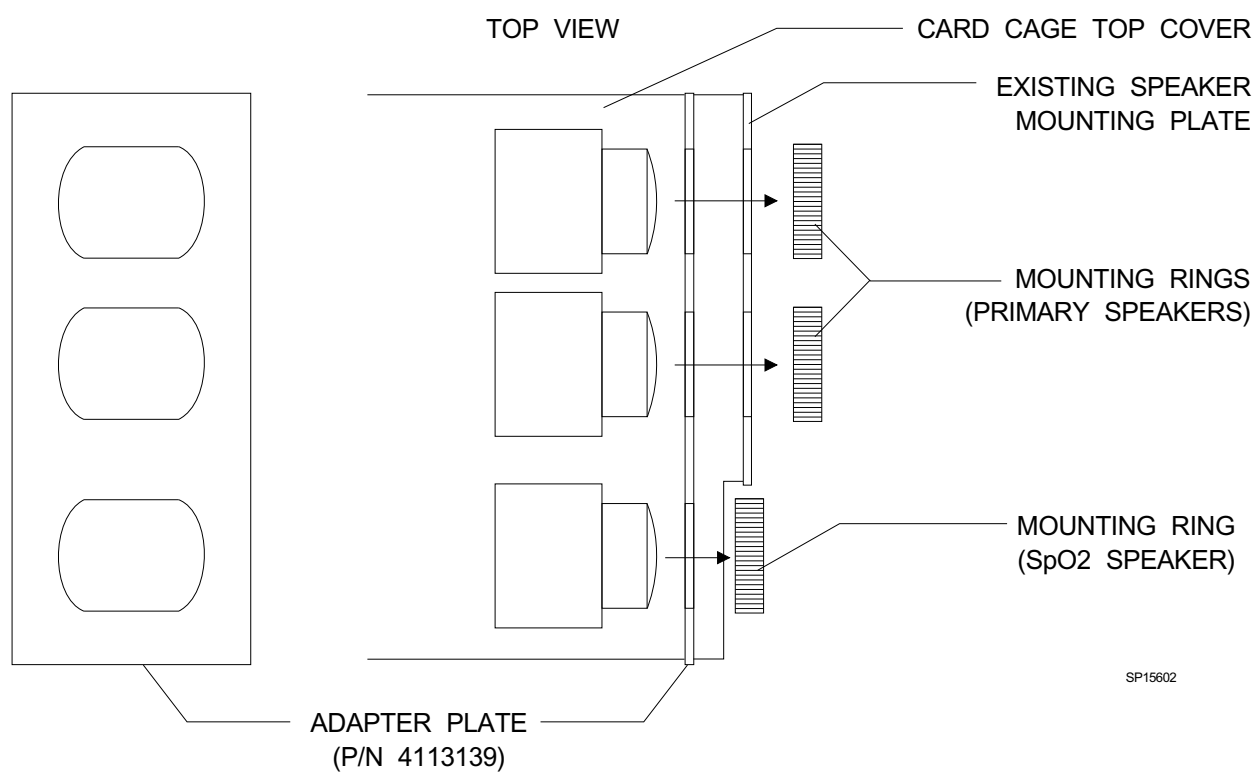
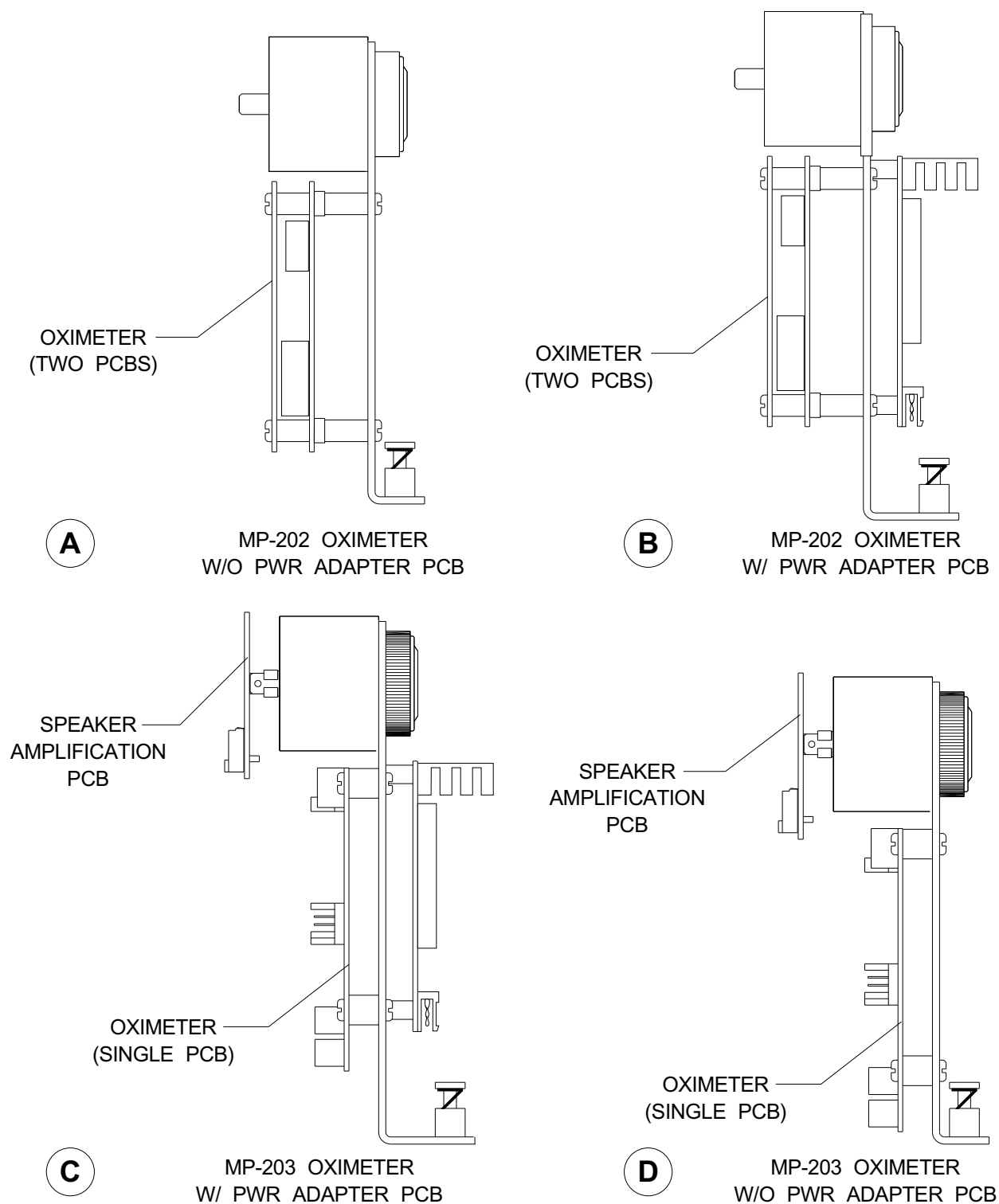


Figure 2: THIRD SPEAKER ADAPTER PLATE INSTALLATION

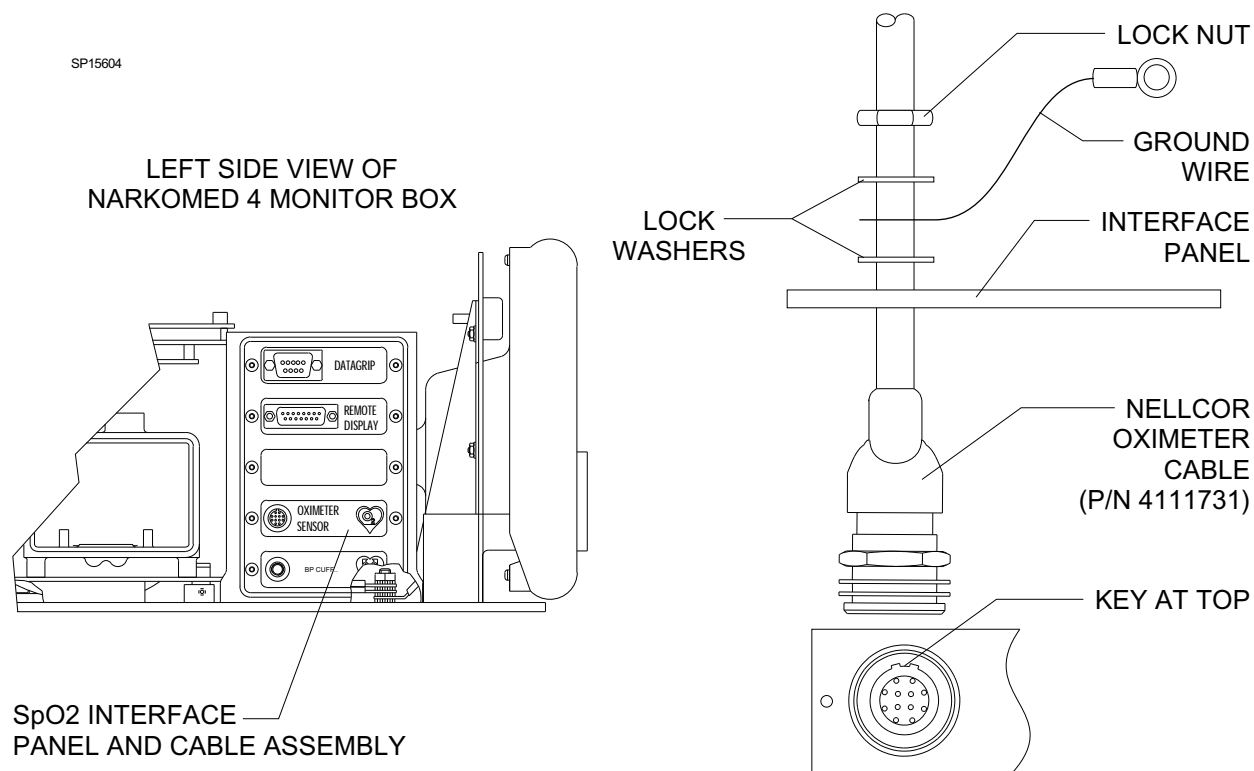
**INSTALLATION PROCEDURE (continued)**



**Figure 3: SpO<sub>2</sub> ASSEMBLY TYPE IDENTIFICATION**

## INSTALLATION PROCEDURE (continued)

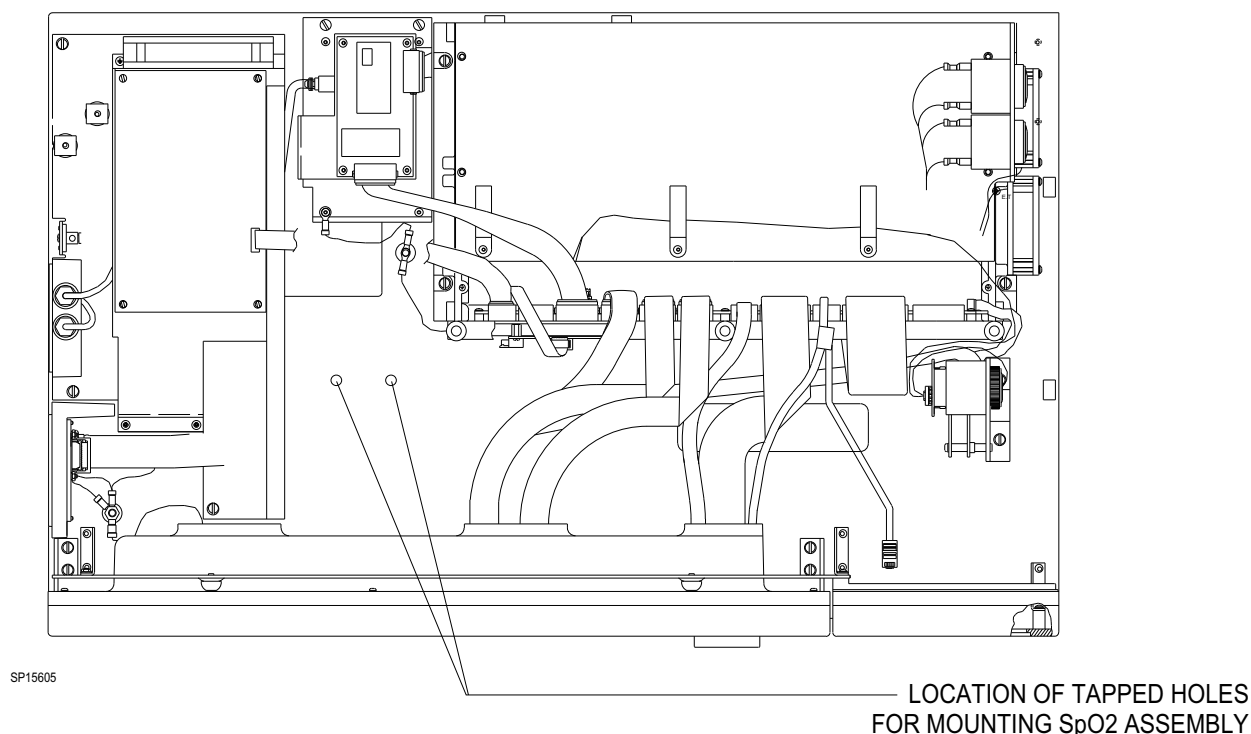
14. Disconnect the ribbon cable from JP5 on the Nellcor MP-203 SpO<sub>2</sub> PCB (J3 on the MP-202 PCB). Disconnect the other end of this cable from J12 on the backplane, and discard the cable.
15. Disconnect the interface cable from connector JP3 on the Nelcor MP-203 SpO<sub>2</sub> PCB (J2 on the MP-202 PCB).
16. Remove the SpO<sub>2</sub> interface panel and cable assembly from the patient interface panel at the left side of the monitor chassis. See Figure 4.
17. Disassemble the SpO<sub>2</sub> interface panel and cable assembly by loosening the lock nut. Slide the lock nut, ground wire ring, and lock washers down to the 10-conductor connector at the end of the Nellcor cable.
- Turn the connector parallel to the cable and carefully slide the lock nut, ground wire ring, and two lock washers over the connector. Slide the Nellcor SpO<sub>2</sub> cable through the hole in the interface panel and discard the cable.
18. Reassemble the SpO<sub>2</sub> interface panel and cable assembly using the new Nellcor SpO<sub>2</sub> cable (P/N 4111731) supplied in the parts kit. Refer to Figure 4 for details on the correct positioning of the cable in the interface panel.



**Figure 4: SpO<sub>2</sub> INTERFACE PANEL & CABLE ASSEMBLY**

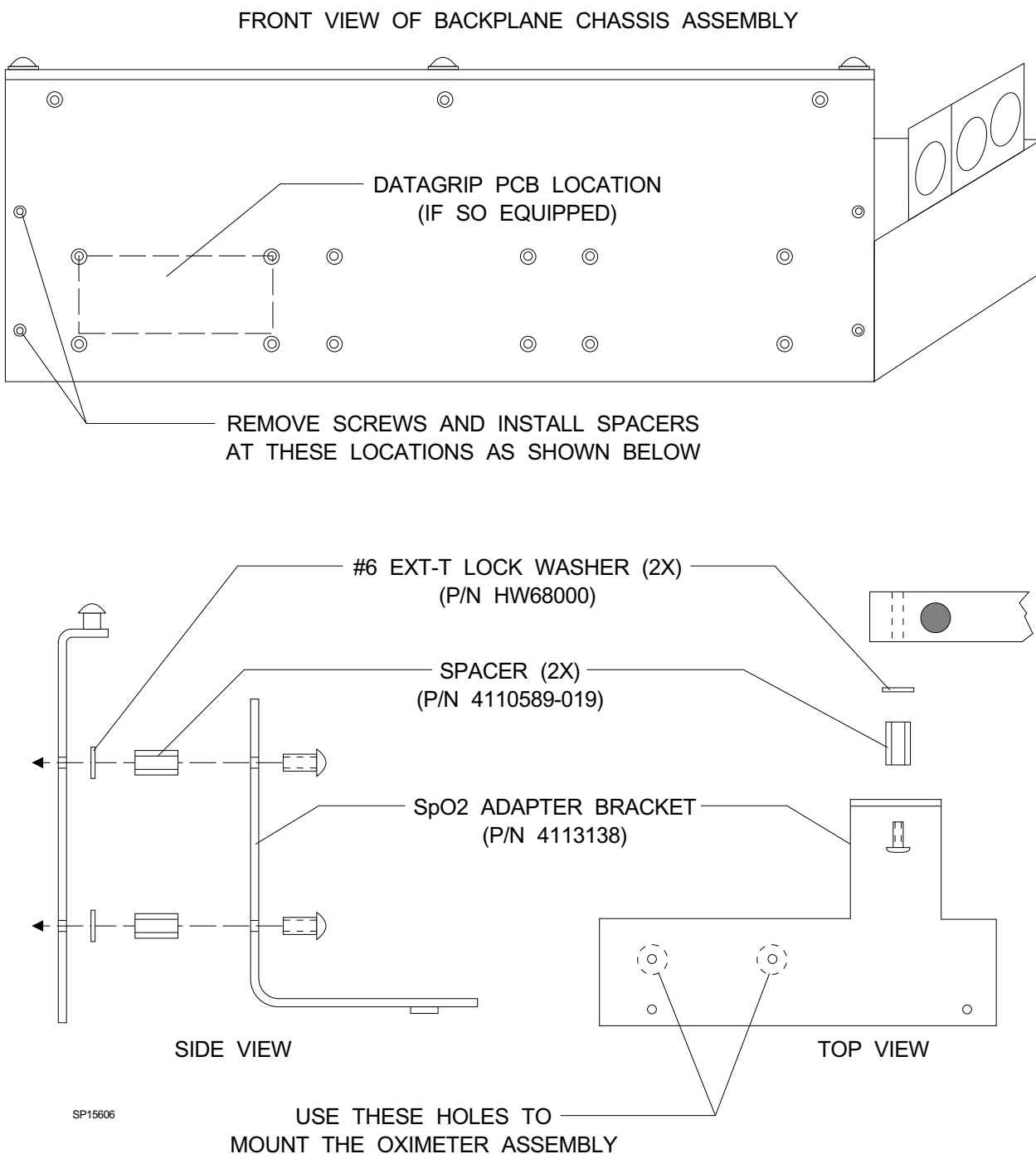
## INSTALLATION PROCEDURE (continued)

19. Examine the monitor box base plate. Later model Narkomed 4s have two tapped holes in the base plate as shown in Figure 5. If the machine has these holes, proceed to Step 23.
20. Remove the two button head hex screws and any lock washers from the left front edge of the backplane assembly. See Figure 6.
21. Install two spacers (P/N 4110589-019) and lock washers (P/N HW68000) in the holes where the screws were removed.
22. Mount the SpO<sub>2</sub> adapter bracket (P/N 4113138) to the spacers installed in the previous step reusing the screws removed in Step 20. See Figure 6.
23. Loosen the two captive screws securing the existing SpO<sub>2</sub> chassis to the monitor chassis base plate and remove the SpO<sub>2</sub> assembly.
24. If the monitor chassis base plate has the tapped holes, mount the SpO<sub>2</sub> assembly in these holes, positioning it with the Nellcor SpO<sub>2</sub> PCBs facing the front of the machine.  
  
If the SpO<sub>2</sub> adapter bracket was installed in Steps 20 - 22, mount the SpO<sub>2</sub> assembly to the adapter bracket with the Nellcor SpO<sub>2</sub> PCBs facing the front of the machine.



**Figure 5: MONITOR BOX TOP VIEW, LATER MODELS**

**INSTALLATION PROCEDURE (continued)**



**Figure 6: BACKPLANE MOUNTING OF SpO<sub>2</sub> ADAPTER BRACKET**

## INSTALLATION PROCEDURE (continued)

25. Connect the ribbon cable (P/N 4109131) to JP5 on the MP-203 oximeter PCB (J3 on the MP-202 oximeter PCB). Ensure that Pin 1 of the connector aligns with Pin 1 (indicated by an arrow in the connector) of the interface cable connector. See Figure 7 for details on the location of Pin 1 on the oximeter PCB connector.  
  
Connect the other end of this cable to J12 on the backplane PCB.
26. Connect the interface panel cable to JP3 on the MP-203 oximeter PCB (J2 on the MP-202 oximeter PCB). Ensure that Pin 1 of the connector aligns with Pin 1 (indicated by an arrow in the connector) of the interface cable connector. See Figure 7 for details on the location of Pin 1 on the oximeter PCB connector.
27. If the oximeter assembly does not have the power adapter PCB, proceed to Step 32.
28. Connect the SpO<sub>2</sub> power supply to backplane wire harness (P/N 4113149) from J3 on the power supply adapter PCB to J28 on the backplane PCB.
29. If the SpO<sub>2</sub> speaker does not have the amplification PCB attached, proceed to Step 31.
30. Connect the SpO<sub>2</sub> speaker cable (P/N 4112509-001) as follows:
  - Connect the 2-conductor end (red and brown wires) of the cable to J21 on the backplane PCB.
  - Connect the 5-conductor end of the cable (yellow and orange wires) to J2 on the SpO<sub>2</sub> power adapter PCB.
  - Connect the 4-conductor end of the cable (brown, red, orange, and yellow wires) to J1 on the SpO<sub>2</sub> speaker amplification PCB.
31. Connect SpO<sub>2</sub> power adapter to backplane wire harness (P/N 4113148) from J1 on the SpO<sub>2</sub> power adapter PCB to J43 on the backplane PCB (J27 on the older P/N 4110699 backplane PCB).
32. Reinstall the monitor box cover and disposable reservoir (and green filter, if so equipped).
33. Reconnect the following items to the patient interface panel on the left side of the monitor box:
  - Remote Display cable
  - BP Cuff & BP Gauge lines
  - Pulse Oximeter cable
  - Datagrip cable (if applicable)
34. Enable the circuit breakers by pressing in each button.
35. Turn the System Power switch to the ON position.
36. Perform a complete PMS procedure on the machine.



INSTALLATION PROCEDURE (continued)

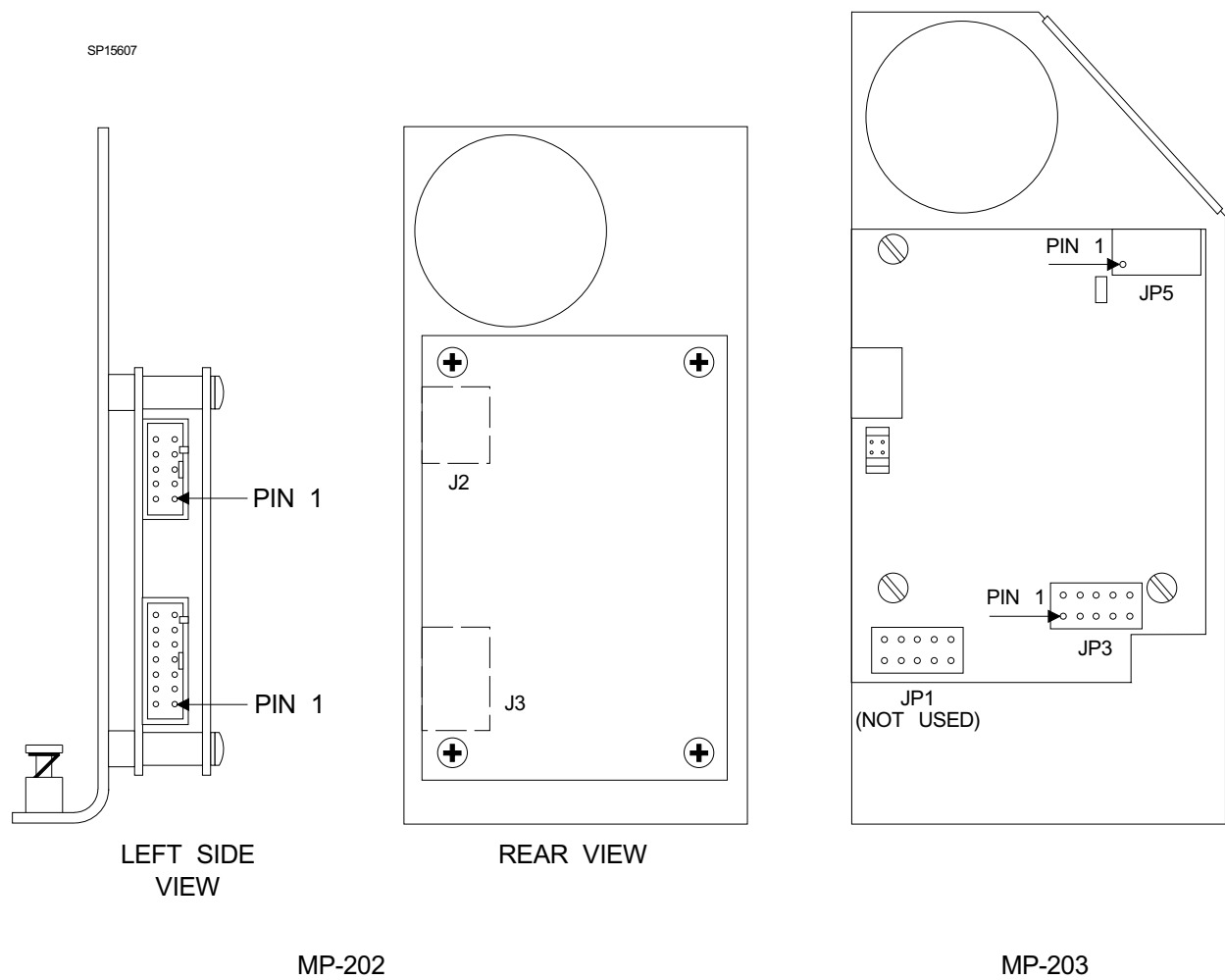


Figure 7: OXIMETER PCB CONNECTIONS



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